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EX PARTE OR LATE FILED

March 31, 1997

Mr. William F. Caton
Secretary
Federal Communications Commission
1919 M Street, NW Room 222
Washington, D.C. 20554

EX PARTE: Federal-State Joint Board on Universal Service (CC Docket No. 96-45)

Dear Mr. Caton:

Late yesterday, March 30, Professor Paul Milgrom of Stanford University sent the attached electronic message regarding the design of an auction for universal service support in the captioned docket to Tom Boasberg, C. Anthony Bush, Jim Casserly, Jim Coltharp, Pat Degraba, Doron Fertig, Mindy Ginsburg, Dan Gonzales, David Krech, Evan Kwerel, Robert Loube, Elliot Maxwell, Bob Pepper, Greg Rosston, Tom Spavins, and Bill Sharkey. In accordance with Section 1.1206(b)(1) of the Commission's Rules, two copies of this notice are being filed with the Secretary of the FCC.

Please let me know if you have any questions.

Sincerely,

Charon J. Harris

Attachment
cc: T. Boasberg, C.A. Bush, J. Casserly, J. Coltharp, P. Degraba, D. Fertig, M. Ginsburg, D. Gonzales, D. Krech, E. Kwerel, R. Loube, E. Maxwell, R. Pepper, G. Rosston, T. Spavins, and W. Sharkey

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Evan and Greg:

Before getting to the main issues, I would like to say that I am more optimistic about the possibility of this auction than many other commenters at the (non)forum. Contrary to the pessimism expressed by several others, I believe that the jury is still out about whether the auction part of the universal service problem is any less tractable than the PCS auction problem in purely economic terms. (It is certainly harder in political terms, due to the greater diversity of interests represented.) In both the PCS problem and the present one, the auction chosen depends on identifying a hierarchy of the most important issues, designing the auction to meet the primary issues and then making appropriate compromises to accommodate the next most important concerns. The March 19 forum was useful for helping to identify issues. The next task is to evaluate how to accommodate the most important remaining issues in the auction design.

Here are some additional comments on some of the issues raised in the ex parte meeting, which I prefer to call the "(non)forum."

BUILD-OUT TIMING

The first concerns a misconception that at least one panelist had about the timing of auctions and universal service obligations. As GTE's filings have said, there would need to be a post-auction transition period for new suppliers, particularly facilities-based suppliers. Someone expressed a fear that a new entrant would need to build out in advance of the auction in order to be ready to provide services immediately upon becoming a COLR. Obviously, that is unworkable; it was never what was anticipated in the GTE plan.

ECONOMIES OF DENSITY

Second is the concern about economies of density. I think any analysis of this has to begin by recognizing that the GTE proposal already handles the two extremes of economies of density perfectly well. If there are CBGs where economies of density are trivial, the auction itself has no problem. If there are CBGs where the economies of density are so great that everyone recognizes that there can be only one COLR, then the sequential withdrawal rule will result in only the lowest bidder remaining after the withdrawal stage, which is the appropriate outcome for such areas. This is true with any number of bidders and any number of initial winners.

For the further analysis, I'm going to assume we're talking about areas with at least moderate economies of density. By this I mean that, first, a lower subsidy is required if there is just one COLR and, second, there is no need

to consider the possibility of more than two facilities-based providers. As a practical matter, if the design handles this case pretty well in addition to the extreme cases, then any criticism of the design based on its handling of economies of density will be of minimal significance.

One relevant criterion is whether the auction provides an adequate subsidy. The principal objection voiced to the GTE proposal based on "economies of density" was that a bidder might get stuck with an obligation that is costlier than it expected when preparing its bid and that a fear of this outcome would result in unnecessarily high bids.

Suppose that there are two winners in the auction. Given the sequential withdrawal rule, there is plainly no danger that the second winner will receive inadequate support, since it will have full knowledge of whether it is the sole supplier at the time it chooses to stay or withdraw. The first bidder will know that it is one of two winners at the time the withdrawal stage begins. If it can assess the likely behavior of the second bidder, it, too, bears no risk at this stage. For example, if the second bidder is an ILEC with its capital already sunk, the low bidder may anticipate that it will be one of two competitors. In such a case, it can make the correct decision. Even if cannot assess the likely behavior perfectly, the second lowest bid may be sufficient in a range of cases to make it worthwhile to stay in the market. If it is not, then choosing to stay in the market entails risk, but not an unusual risk: the decision is made knowing who the potential competitor is and what the subsidy will be if the competitor chooses not to withdraw its bid. On this criterion, I see no problem: the risks born by the bidders are quite manageable in the existing GTE auction proposal.

If the low bidder in the auction has bid on the presumption that it will be one of two winners, it has the option to withdraw its bid. Such a withdrawal can only improve the situation for the higher bidder; the subsidy it receives is certainly adequate in that case.

A second criterion is whether the sequential withdrawal mechanism selects the correct winner when it selects only one. If it is the second bidder that withdraws, we may conclude that its bid has been based on being sole COLR and that this is higher than the amount demanded by the low bidder for either being sole COLR or for the more expensive role of joint COLR. In this case, then, the outcome is correct. If it is the first bidder that withdraws and if it correctly expects that the second bidder would not withdraw, then we may infer that the second bidder is willing to serve as joint COLR at a price that the low bidder cannot afford. If economies of density are similar for the two bidders, then the low cost supplier has been selected. The withdrawal game could pick the wrong sole supplier if either (1) the

economies of density are much more important for the lowest bidder than for the second lowest bidder or (2) the low bidder has incorrectly guessed the plans of the second lowest bidder.

A final question in this category is whether the auction selects the right number of suppliers. If both bidders bid on the assumption that they will be a second supplier and increase their bids accordingly, then the outcome is too likely to have multiple suppliers selected. Indeed, it could happen that if the low bidder had realized it would be the low bidder, it could have further reduced its bid and been the sole winner in the auction.

ECONOMIES OF DENSITY AND AUCTION THEORY

Going back to the underlying analysis, economies of density that are uniform among bidders do suggest a slight change in the auction theory analysis. The optimal auction does not ask bidders to guess and base their bids on whether there will be one or two suppliers. Rather, it operates by adjusting the price according to the number of suppliers. If we knew that duplicated fixed costs of the network accounted for, say, 40% of the costs in an area, then we would be likely to increase the subsidy by 20% when there are two winning bidders.

A more fundamental difficulty is that bidders may have private information about both the overall level of their costs and the split between fixed and variable. The optimal auction design for this situation is much more complex than for the simpler situation we've been discussing. In that context, we would have to worry not only about a bidder misrepresenting the level of its costs, but also exaggerating the fixed portion of its costs in order to deter entry by other bidders, as could be possible in the Vincent proposal.

OPTION TO MATCH

A new feature of the rule that Barry Nalebuff identified in his discussion was an "option to match" by bidders besides the lowest bidder. This is a rule that the GTE team had considered and rejected some weeks ago, but which perhaps deserves a fuller vetting. Our preliminary conclusion was that allowing the second lowest bidder an option to match the low bid in an auction with few bidders could result in much higher prices than the rule we specified, because a bidder in a two-bidder auction who does not expect to be able to deter the other's market participation has no reason to bid less than the reserve price.

(This is different than the conclusion that Bulow and Nalebuff reached because they applied the matching rule in a different auction, with fixed market shares. Our proposal does not fix the market shares of the winners.)

CONSUMER HETEROGENEITY

Professor Nalebuff placed a great deal of emphasis on consumer heterogeneity with respect to both cost and demand in the (non)forum. He implied that, even if costs in a CBG are relatively homogeneous, a CLEC might wish to select some "non-COLR customers" whose demand for high value services makes them attractive to serve at an unsubsidized price. In that conception, he argued, the provision of a per customer subsidy distorts competition between the COLR and non-COLR.

The GTE proposal was designed based on a different premise, namely, that most of the universal service subsidy will be spent in CBGs where the high cost of service apply to all customers and where most customers will not be served unless a subsidy is provided. With that premise, the more important potential distortion is in consumer choices between basic service and various premium services. With a subsidy only for basic services rather than for all customers in the high cost area, too many customers would purchase only basic services and fewer profits from vertical services would be available to help offset the universal service subsidy.

COMPETITION IN THE MARKET

Finally, I'd like to reiterate what I think is a major advantage of the GTE team's proposal over the Ameritech team's proposal. Theirs offers no hope of competition *in the market* among COLRs. In the optimal auction analysis that is the underpinning of the GTE proposal, if one chooses to give no weight to competition in the market and if there are any economies of density, the solution is always to have a single COLR. Indeed, Bulow and Nalebuff offer no reason to have a second COLR in their proposal, since the second COLR raises costs and total subsidies without offering any of the benefits of competition in the market.

Paul Milgrom